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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/884,115	06/20/2001	Shigeto Adachi	209937US-2	3477
22850	7590	06/01/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MAYEKAR, KISHOR	
			ART UNIT	PAPER NUMBER
			1753	

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/884,115

Applicant(s)

ADACHI ET AL.

Examiner

Kishor Mayekar

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5,8,10-15,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,8,10-15,22 and 23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 8, 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the above claims, the claims are indefinite because of the phrase "electrode dipped into liquid" as now amended. Applicant might consider using language such as --electrode arranged to be dipped into liquid-- to eliminate reference to a method of operating the device and/or improper<sup>reciting</sup> liquid as part of the device's structure.

### *Claim Rejections - 35 USC § 102 and § 103*

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-5, 8, 10-15, 22 and 23 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Creighton (US 5,766,447), for reasons as of record.

5. Claims 1-5, 8, 10-15, 22 and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Locke et al. (6,491,797) in view of Creighton '447, for reasons as of record.

*Response to Arguments*

6. Applicant's arguments filed March 7, 2005 have been fully considered but they are not persuasive.

In response to the applicant's argument that needle electrodes of Creighton are not dipped or immersed into the treated liquid, the examiner would like to bring the applicant's attention that Creighton discloses:

- o in the abstract that a pulsed electric field is generated in the aqueous solution between two electrodes and at least one of the electrodes is covered with a layer of a dielectric material, which during operation of the device, completely separates the electrode(s) from the aqueous solution;

- o in col. 9, lines 10-12, the grounded electrode (130, 131) is covered by a dielectric layer (132) which entirely separates the grounded electrode from the aqueous solution ;
- o in col. 9, lines 23-25, the corona electrode is surrounded by a dielectric (135), with the exception of the tips (136);
- o in col. 3, lines 3-7, the corona electrode is covered with a layer of a dielectric with the exception of those parts of the electrode surface where the radius of curvature is small enough for the formation of streamer discharge; and
- o in claims 13 and 14 that first electrode comprises at least one corona needle tip and is substantially immersed in the aqueous solution and the second dielectric-covered electrode in contact with the aqueous solution.

As such, Creighton clearly discloses that both the corona needle electrode and the dielectric-covered, grounded electrode are immersed in the aqueous solution.

To the argument that Creighton does not provide the function of the claimed "means for applying a pulsed power .... larger than 500 kV/cm", since Creighton discloses the production of high voltage pulse with a voltage-pulse height not more than 100 kV (1-100 kV) and the diameter of the corona electrode

of 0.8 mm both are within the claimed range, the issue of field strength larger than 500 kV/cm would be inherently in Creighton's teachings. Further, since the inherency has been established by the examiner in the last Office action and since the applicant does not provide the burden of proof (see *In re Ludtke* 169 USPQ 563; *In re Swinehart* 169 USPQ; *In re Wuiegard* 86 USPQ 155), the rejection stands.

To the argument on the obviousness of the claims over Creighton, since the prior art's range are within or overlapping the claimed range, the rejection also stands.

To the argument that Creighton does not teach or suggest a movement mechanism for moving the electrodes, since Creighton discloses in col. 9, lines 41-44 that the distance between the grounded electrode and the corona electrode was variable, as asserted by the examiner in the last Office, the rejection stands.

To the argument over the obviousness of claims over a combination of Locke et al. and Creighton, since the provision of mechanical means or automatic means to replace manual activity has been held to be obvious, as asserted by the examiner, and since Creighton is applied as above, the rejection stands.

*Conclusion*

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

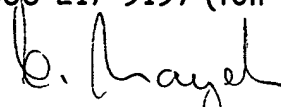
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kishor Mayekar whose telephone number is (571) 272-1339. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kishor Mayekar  
Primary Examiner  
Art Unit 1753